

From: [Suero, Mary Ann](#)
To: [Guerriero, Margaret](#); [Klevis, Mardi](#); [Master, Edward](#); [Reed, Khesha](#); [Davis, Matthew](#); [Coopwood, Theodore](#)
Subject: Clyde / Eastern Sandusky Cancer - FW: New Assignment - Control AX-13-000-4455
Date: Thursday, April 18, 2013 10:58:31 AM
Attachments: [AX-13-000-4455 Control Slip.pdf](#)
[AX-13-000-4455 Incoming.pdf](#)
[AX-13-000-4455 Signoff Sheet.docx](#)
Importance: High

This is the letter the attorneys and families spoke of at their press conference last Monday (4/8). The letter was sent to Bob Perciasepe as well as Steve Wolfe, the Superfund OSC for EPA's assessment and Cathy Marwick (ORC) as well as head of Ohio EPA, Ohio Department of Health and Sandusky County Health Department. The independent assessment carried out by the attorneys identified benzaldehyde in all of the attic dust samples they took. They are asking the following

"This finding in every single home we tested in Clyde leaves many public health issues unanswered that we believe require intervention and investigation by your agencies. Such

questions include, but are not limited to:

1. What is the source of the benzaldehyde?
2. How did it get into the attics of Clyde?
3. Is it the common source of the childhood cancer cluster in Clyde?
4. Does benzaldehyde react with other chemicals or is it a bi-product of another chemical process?
5. What is required to clean the attics of these homes?
6. What is the geographical extent that the benzaldehyde dust extends?"

Although the attorney's letter indicates benzaldehyde "is known to cause mutations that lead to cancer" and provide a link from an EPA website (that actually references a NJ Hazardous Substance Fact Sheet, EPA's IRIS database indicates that benzaldehyde has not been assessed for carcinogenic potential.

It looks like the control is assigned to Superfund R5 and will be signed by their DD - -
- I'm not sure what our response will be...I'll let you know what they're looking for from me.

maryann

From: Wolfe, Stephen
Sent: Thursday, April 18, 2013 10:05 AM
To: Suero, Mary Ann
Subject: FW: New Assignment - Control AX-13-000-4455

Hi Mary Ann,

Please see attached – this is a letter from the family attorney's concerning dust sampling conducted by them

Thanks,

Steve Wolfe

From: Bertanna Louie [mailto:Louie.Bertanna_epamail.epa.gov] **On Behalf Of** SFDIO epa.gov
Sent: Thursday, April 18, 2013 9:27
To: Wolfe, Stephen; Durno, Mark
Cc: El-Zein, Jason; Mcseveney, Megan; SFDIO
Subject: New Assignment - Control AX-13-000-4455

Good morning,

Attached is the incoming letter, control slip, and e-routing sheet for:

Control #: AX-13-000-4455

Subject: Daily Reading File - Clyde Ohio Cancer Cluster

DUE IN ORA: April 30, 2013

Please begin drafting a response for the Division Director's signature. If you have any questions, respond to this message or contact the SFD immediate office at 3-9773.

Thank you!

Bertanna Louie
SFD IO

(See attached file: AX-13-000-4455 Incoming.pdf)(See attached file: AX-13-000-4455 Control Slip.pdf)(See attached file: AX-13-000-4455 Signoff Sheet.docx)

Nonresponsive

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April 10, 2013

ALAN W. MORTENSEN
ALSO ADMITTED IN
WYOMING
COLORADO

EXECUTIVE SECRETARIAT

OFFICE OF THE

2013 APR 17 AM 8:05

RECEIVED

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Ohio Department of Health
246 North High Street
Columbus, Ohio 43215

Commissioner David. G. Pollick
Sandusky County Health Department
2000 Countryside Drive
Fremont, Ohio 43420

Re: Clyde Ohio Cancer Cluster

Dear Directors, Directors, Commissioner and Counsel:

As some of you know, several of the families of victims of the childhood cancer cluster have retained us to investigate the many unanswered questions of this matter. As part of this investigation, we retained an environmental engineer, Joel Hebdon, to perform some dust particulate testing in the attics of some of the families' homes and one home that had no children in it. I am attaching a copy of Mr. Hebdon's protocol. *See Attachment One.*

The testing results have come back. High levels of benzaldehyde were found in every single home that was tested, from a home that was ten years old to a home that is over 100 years old. The levels were for the most part very consistent, which indicates that the production of this dust occurred in the past ten years. No benzaldehyde was found in the water treatment plant, which indicates that what ever was producing the benzaldehyde dust has likely not produced any in the past few of months. *See Attachment Two.*

As recognized by the USEPA on its web page (<http://www.epa.gov/enviro/html/emci/chemref/100527.html>), benzaldehyde is known to cause mutations that lead to cancer. *See* New Jersey Department of Health and Senior Services Hazardous Substance Fact Sheet, Attachment Three. It is also known to be used in the manufacture of home appliances.

This finding in every single home we tested in Clyde leaves many public health issues unanswered that we believe require intervention and investigation by your agencies. Such questions include, but are not limited to:

1. What is the source of the benzaldehyde?
2. How did it get into the attics of Clyde?
3. Is it the common source of the childhood cancer cluster in Clyde?
4. Does benzaldehyde react with other chemicals or is it a bi-product of another chemical process?
5. What is required to clean the attics of these homes?
6. What is the geographical extent that the benzaldehyde dust extends?

On behalf of my clients, we invite your agency to participate in finding answers to these questions. We have not released the findings to the public in fear that people would over-react. My clients to whom I have copied this letter have all been instructed to remain silent and to keep this information confidential for the time being. That being said, if an immediate response is necessary to the citizens of Eastern Sandusky County, we should know that. We request your immediate involvement in getting answers to the above questions.

We also represent five women whose property abuts the Whirlpool park that all have come down with cancers that are common to PCB exposure. We also represent two adults who live next to the park that have significant mental disabilities that are consistent with PCB exposure. It is our understanding that a Workplan has not yet been approved by the EPA for the Whirlpool Park. As you can imagine, the existence of PCBs at the park, with no assessments, let alone results, is causing significant anxiety to our clients and the community at large. The fact that Whirlpool is going to be conducting the testing is also causing great anxiety. This anxiety was heightened when I found some rusty barrels last Saturday in the Green Creek bank, ten yards away from the Whirlpool Park Property boundary. At least one of these barrels at one point in time contained liquid Teflon. *See* Attachment Four. We would again request that we be entitled to participate in the Workplan process and monitor the testing that is done. Can we receive a copy of the current draft of the Workplan?

We look forward to your immediate response to these issues. Please call with any questions you may have.

Page 3
April 10, 2013

Sincerely,



Alan W. Mortensen

Enclosures
AWM/me

cc:

Nonresponsive responsive [redacted] n
[redacted] n
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PCB Indoor Dust Sampling Plan

Prepared for:

DEWSNUP, KING & OLSEN
36 South State Street, Suite 2400
Salt Lake City, Utah 84111

Prepared by:

Joel B. Hebdon, MBA, PG, PMP

February 2013

Table of Contents

| | |
|------------|--|
| 1.0 | Introduction |
| 1.1 | Executive Summary |
| 1.2 | Site History, Location and Description |
| 2.0 | Project Description |
| 2.1 | Objectives and Data Use |
| 2.2 | Scope of Work |
| 3.0 | Sampling Procedure |
| 3.1 | Sample Collection |
| 3.2 | Sampling Matrices |
| 3.3 | Dust Samples |
| 3.4 | Documentation |
| 3.5 | Decontamination |
| 4.0 | Analytical Protocols |
| 5.0 | QA/QC Procedures |
| 5.1 | Responsibility |
| 5.2 | Field QC |
| 5.3 | Laboratory QC |
| 5.4 | Field Variances |
| 5.5 | Data Validation |
| 6.0 | Reporting |

Map 1. Eastern Sandusky EPA Study Area

Figure 1. Configuration of SWAPE Dust Collector

Table 1. Analytical Parameters and Methods

Appendix: Indoor Dust Sampling Procedure

Attachment 1. Field Documentation Standard Operating Procedure

Attachment 2. Sample Handling Standard Operating Procedure

1.0 Introduction

1.1 Executive Summary

Polychlorinated biphenyls (PCBs) are persistent organic pollutants. PCBs are mixtures of up to 209 individual congeners. Evaluations conducted by the Agency for Toxic Substances and Disease Registry (ATSDR) suggest that PCBs may be highly toxic and cause a wide variety of health effects in humans including cancer, neurotoxicity, and reproductive and developmental toxicity.

Once in the environment, PCBs do not readily break down and therefore may remain for very long periods of time. They can easily cycle between air, water and soil. For example, PCBs can enter the air by evaporation from both soil and water. In air, PCBs can be carried long distances. In general, the lighter the type of PCBs, the further they may be transported from the source of contaminants. PCBs are present as solid particles or as a vapor in the atmosphere.

This sampling plan was prepared to guide the collection of representative samples of dust in the attics of residential homes to determine whether PCBs and other contaminants may be present. Single/multiple samples will be collected from undisturbed areas of participating households.

All samples, including required blanks and duplicates, will be submitted to a qualified laboratory for chemical analyses. Analyses will include, at a minimum, PCBs. All analyses will be performed in conformance with established EPA protocols that have been determined to be appropriate based upon method detection limits and established quality requirements.

Data results of this sampling and analytical effort will be reported in standard format with field sampling and laboratory quality documentation attached. Any data that fails to meet field or laboratory quality protocols will be appropriately qualified in accordance with EPA methods.

1.2 Site History, Location and Description

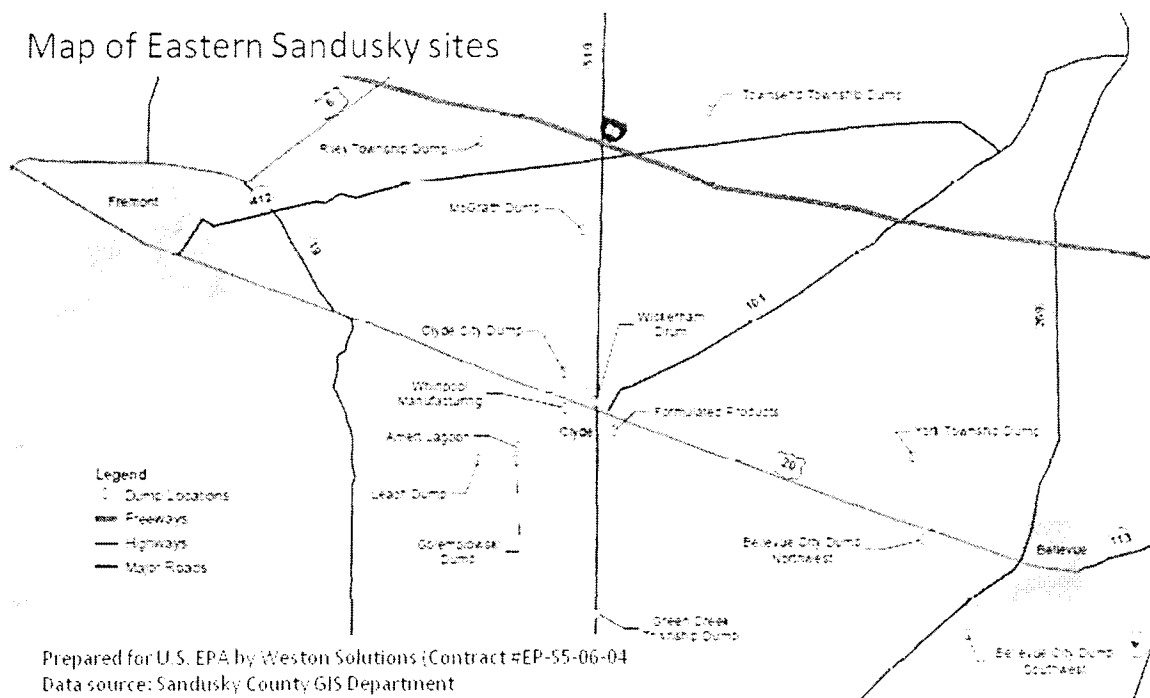
The U.S. Environmental Protection Agency (EPA) is assessing potential sources of contamination in eastern Sandusky County, Ohio. EPA has assessed 14 sites that had been previously identified by state agencies. EPA also conducted site assessments at three additional properties: the former Whirlpool Park site, a residential property on the west side of Clyde in rural Sandusky County, and the former Clyde Paint and Supply Co. site.

In June 2012, U.S. EPA collected soil samples at the former Whirlpool Park site and found elevated levels of polychlorinated biphenyls (PCBs) more than six feet below ground. In October 2012, U.S. EPA removed lead-contaminated soil and empty drums that were dumped years ago at a residential property on Shaw Road on the west side of

Clyde in rural Sandusky County. Then, in November 2012, U.S. EPA removed soil contaminated with lead, chromium and xylene from the site of the former Clyde Paint and Supply Co. Evaluations of contamination at these sites is ongoing.

In these studies, EPA does not appear to be gathering data appropriate for definitive assessment of contaminant release, migration and exposures of humans via air dispersion. Rather, it appears that emphasis is being placed on characterization of contaminated media to determine whether it is regulated under the Resource Conservation and Recovery Act (RCRA) and whether Regional preliminary remediation goals (PRGs) are exceeded. If PRGs are exceeded in contaminated soils, voluntary contaminant removal by property owners is being facilitated.

PRGs, while a useful tool in cleanup, are irrelevant for determining human health risk resulting from exposures to PCBs dispersed in dusts. Therefore, for the purposes of the current study, PRGs will be ignored. Rather, the latest assessments available from the Agency for Toxic Substances and Disease Registry (ATSDR) will be consulted and comparisons will be made based upon criteria identified there.



Map 1. Eastern Sandusky EPA Study Area

2.0 Project Description

2.1 Objectives and Data Use

The primary objective of this sampling is to determine if PCBs exist in detectable concentrations in home attic dust. Analyses of additional parameters will be performed if adequate sample volume can be obtained. These additional analyses will include volatile organic compounds (VOCs), semi-volatile compounds (SVOCs), toxic metals, herbicides and pesticides. Data derived from this sampling activity may be used in risk assessment, site characterization, and exposure assessments. Data quality requirements will therefore include strict conformance to EPA standard methods.

2.2 Scope of Work

Undisturbed attics can act as archives of atmospheric dust. This dust provides a very useful tool to scientists attempting to understand historic air pollution. The use of attic dust has the advantage of being a measurement of historical air pollution over time. Atmospheric dust that settles in attics may be undisturbed for many years. It is primarily derived from external sources and enters attics through ventilation ducts intended to allow air flow through structures.

Researchers have stated that "undisturbed attics may act as archives of atmospheric dust, by preferentially trapping and preserving airborne particulate matter (Cizdziel and Hodge). Another study concluded that "potentially, the most distinctive advantage attic dust offers is its ability to be used as a surrogate for human exposure to ambient air pollutants" (Ilacqua, et al). Assessments using attic dust have been published in numerous places in the scientific literature (Procedia Environmental Sciences, etc.).

This study is focused on historic PBC releases and the assessment of pollution using settled attic dust as a measure of human exposure over time. PCBs released from historical manufacturing and waste management activities in eastern Sandusky County, Ohio, may have migrated through air into the surrounding community where they were deposited. Analyses of attic dust samples will provide information into the historic deposition of these pollutants.

One to several dust samples will be collected from attics of residential homes near the Clyde Cancer Cluster study area. The sampling method will employ a vacuum modified for collecting bulk dust from limited access areas such as attics, and for assessment of PCBs and other persistent organic pollutants. The method has been described in depth by Wu et. al. The method was adapted from and is similar to the method used by the U.S. EPA for the World Trade Center Indoor Air Task Force Working Group for the WTC Screening Methods Study in New York City.

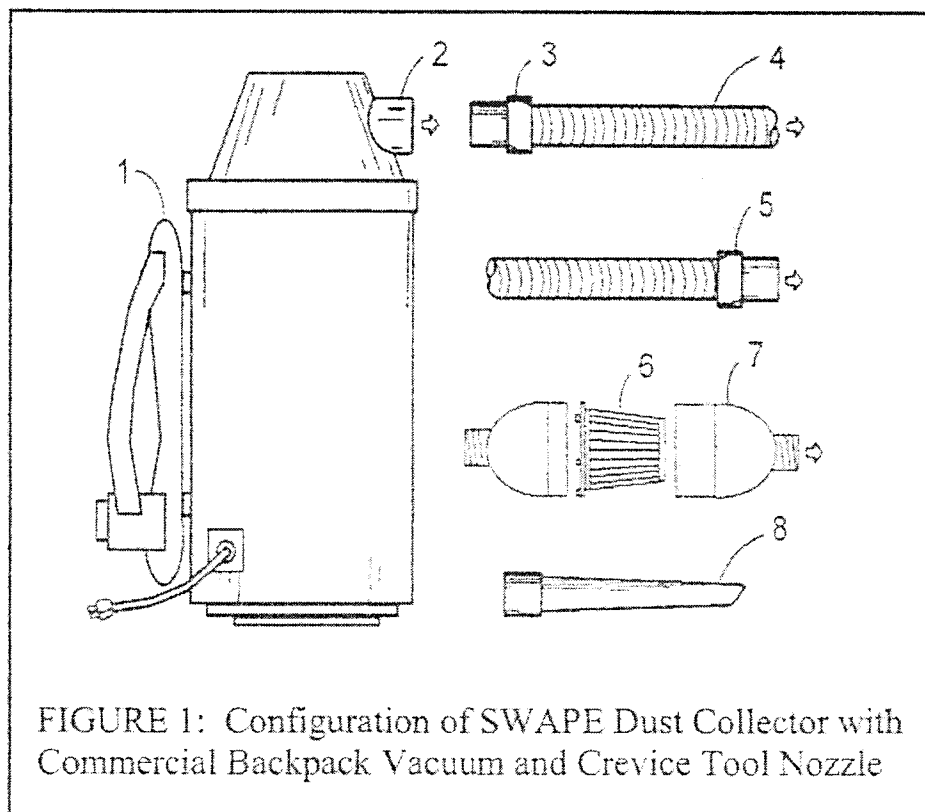
3.0 Sampling Procedure

3.1 Sample Collection

Individual attic dust samples will be collected using a portable vacuum and single-use, high-efficiency particulate air filter sampling cartridges. Each filter cartridge will be constructed of a Black and Decker Model VF100H HEPA filter and two 8.5 centimeter, inner-diameter polyethylene bottles. These components will be cut to size and bonded together around the filter to form a cartridge. Standard duct tape will be used to seal the components into the cartridge.

For each attic dust sample, a pre-assembled filter cartridge will be fitted onto the air intake hose of the vacuum. A crevice tool will be fitted onto the front of the filter cartridge and sealed with duct tape. All crevice tools and filter cartridge components will be either new or they will have been thoroughly decontaminated by scrubbing and rinsing in alternating cycles using 91% isopropyl alcohol in a process described by Wu et. al. Attic dust samples will be analyzed for PCBs in accordance with U.S. EPA Method 1668 using High Resolution Gas Chromatography/High Resolution Mass Spectroscopy.

All sampling activities will be performed by Hebdon's sampling team. The team will consist of a team leader/sampler and a quality assurance technician. The team leader will be responsible for communication with the residents of each home. The sample team will be responsible for the proper field documentation and field collection of samples. Approximately 70 grams of sample will be needed to perform all analyses. Approximately 5-10 grams of sample will be required for metals analysis and approximately 30 grams will be required for PCB analysis.



3.2 Sampling Matrices

Samples will consist of attic dust only. Little EPA guidance exists on the sampling of dust or on the handling of dust samples. Therefore, the dust samples collected through this sampling effort will be treated as dry, solid samples. Holding times and sample preservation protocols have generally not been established for these matrices, or where they do exist, they are very generous. The holding time for attic dust samples will not exceed 6 months.

3.3 Documentation

Documentation will be recorded in a bound field notebook in conformance with SOP 1, Field Documentation (attached).

3.4 Decontamination

Personal field gear and the majority of field sampling equipment scheduled to be used at the homes whose attics are being sampled will be single-use, disposable, and will be double-bagged and disposed of as dry industrial waste. Any non-disposable sampling equipment, such as stainless-steel samplers, will be decontaminated on-site before re-use. Decontamination will consist of rinsing in soap and water followed by rinsing in a 91% alcohol solution.

4.0 Sampling and Analytical Protocols

EPA standard analytical methods found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (SW-846), will be used for all analyses. The following analyses are anticipated if adequate sample can be obtained. If sample volumes are limited, the priority will be to obtain PCB analyses, then VOCs/SVOCs.

| Analysis | EPA Method |
|---|------------------------------|
| | |
| Volatile Organic Compounds (VOCs) | SW-846 Methods 1311 and 8260 |
| Semi volatile Organic Compounds (SVOCs) | SW-846 Methods 1311 and 8270 |
| Polychlorinated Biphenyls (PCB) | SW-846 Method 8082 |
| Pesticides | SW-846 Methods 1311 and 8081 |
| Herbicides | SW-846 Methods 1311 and 8151 |
| Total Metals | SW-846 Methods 1311, 6020A |

Table 1. Analytical Parameters and Methods

5.0 QA/QC PROCEDURES

5.1 Responsibility

The Field Team Leader or Sampler will be responsible for ensuring that sample quality and integrity are maintained. The Sampler will also ensure that sample labeling and documentation are performed in accordance with the Attachment 1, Field Documentation Standard Operating Procedure.

Air carriers that transport hazardous materials, in particular Federal Express, require compliance with the current International Air Transport Association (IATA) Regulations, which applies to the shipment and transport of hazardous materials by air carrier. This study will be utilizing air carriers to transport environmental samples (not hazardous waste samples).

5.2 Field QC

Field QC will consist of collecting and analyzing field duplicates. The duplicate samples will be collected for samples at a rate of one per 20 samples (minimum of 1 duplicate). Each sample from a duplicate set will have a unique sample number; the duplicates will be sent "blind" to the lab. Because of limited availability of amounts (mass) of dust, duplicate dust samples will be collected as able, based on mass collected in the field.

5.3 Laboratory QC

Laboratory quality control and quality assurance will be ensured by specifying on analytical request forms that standard EPA analytical methods are to be used for all analyses. Under EPA protocols, the laboratory will then be required to meet all applicable QC requirements and report in the analytical data package on how those requirements and performance criteria are attained.

A field sample may be designated as a "lab QC sample" at a frequency of 1 per 20 samples (minimum of 1 QC sample) and be analyzed for all parameters. The lab QC sample is the sample the laboratory will use for its internal quality control analyses. The lab QC sample will be a sample suspected of being contaminated that is representative of other contaminated samples. If possible, the lab QC sample will consist of a double volume of sample. The sample containers and paperwork will be clearly labeled "Lab QC Sample." If it is not possible to collect a laboratory QC sample due to the unavailability of attic dust, this will be clearly noted and thoroughly explained in the sampling field log.

5.4 Field Variances

As conditions in the field may vary from that planned or conceived, it may become necessary to implement minor modifications to sampling as presented in this plan. When modifications are needed, the team leader will be notified, and when appropriate, other

members of the project team may be consulted. In all cases, documentation of field changes will be conducted by the sample team.

6.0 REPORTING

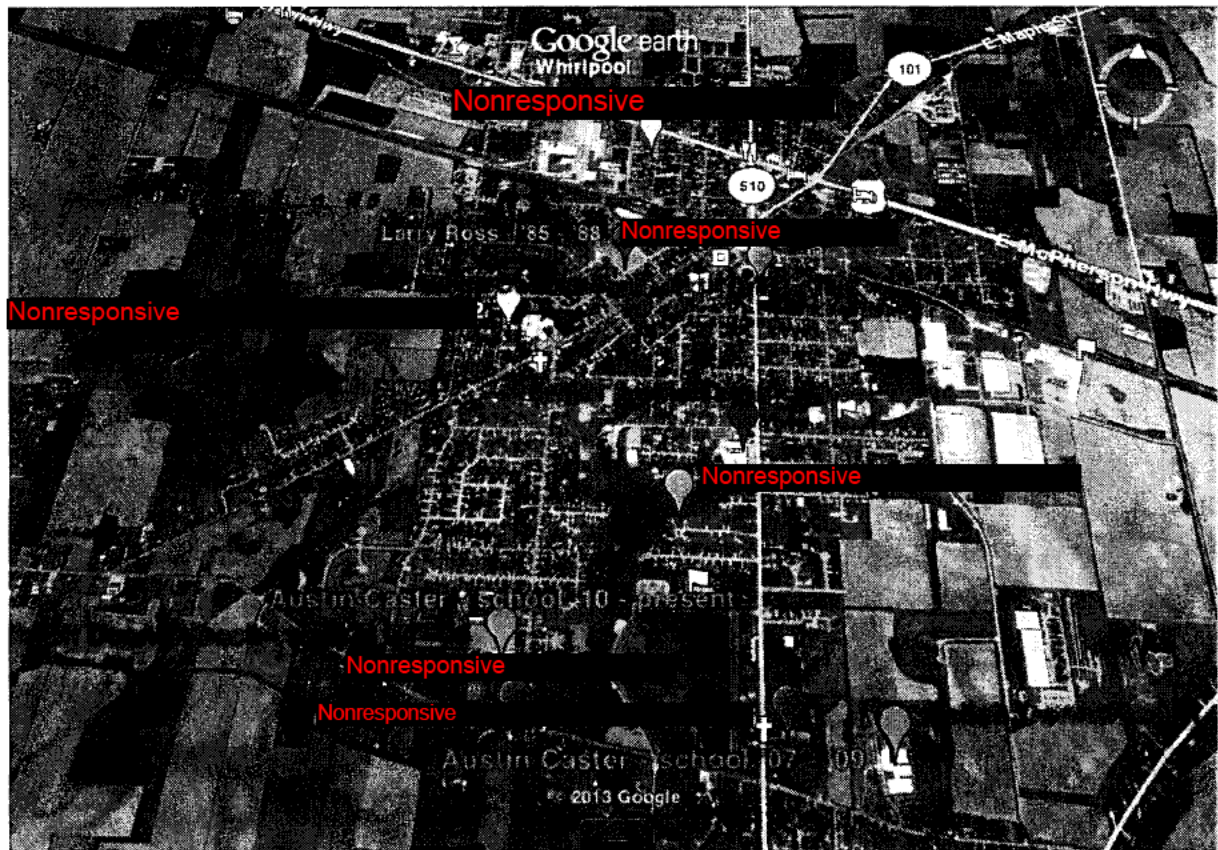
Information gathered from this sampling effort will be received by the contractor (Hebdon). Hebdon will compile the analytical results and field data. The completed sampling information will be forwarded to Dewsnap, King & Olsen for their use.

Analytical results will be reported as qualified by the laboratory. Data will be summarized and compared against ATSDR Minimal Risk Levels (MRL) of 0.03 ug/kg/day for a 70 kg adult male and EPA Regional Screening Level (Superfund program) of 2.2E01 mg/kg for Arochlor 1254 in residential soils. There is no MRL or RSL for contaminants in dust.

Appendix 1: Indoor Dust Sampling Procedure

See "World Trade Center Dust Screening Method Study", US EPA, 2002

Appendix 2: Clyde Cancer Cluster mapping



Standard Operating Procedure 1.

Field Documentation

1.0 INTRODUCTION

This Standard Operating Procedure (SOP) is a general reference for the required documentation to be completed during field investigations. Subject to the requirements of the sampling and analysis plan, records in the form of field logbooks, reports, and forms should normally be completed for the various field activities. Records should be maintained on a daily basis as the work progresses, and should contain enough information to allow the activities to be completely reconstructed. All field records must be accurate, objective, and legible. The field logbook should contain detailed records of all the field activities, interviews of people, and observations of conditions at a site. Entries should be described in as much detail as possible, so that personnel can accurately reconstruct the activities and events which have taken place.

1.1 PURPOSE

The purpose of this SOP is to provide guidance to ensure that field documentation for any field activity is correct, complete, and adequate. Logbooks and field forms are used for identifying, locating, labeling, and tracking samples. A logbook should document any deviations from the field sampling and analysis plan, quality assurance project plans, and health and safety plans. A complete and accurate logbook also aids in maintaining good quality control. Quality control is enhanced by the proper documentation of all observations, activities, and decisions.

1.2 SCOPE

This SOP establishes the general requirements and procedures for adequately documenting field activities.

2.0 FIELD DOCUMENTATION PROCEDURES

Field documentation serves as the primary foundation for all field data. Field documentation must be accurate, legible, and written in indelible ink. Mistakes are to be crossed out with one line, dated, and initialed. Skipped pages or blank sections at the end of a page should be crossed out with an "X" covering the entire page or blank section, dated and initialed. The person making the correction should write "No Further Entries," and date and initial the page. The responsible field team member should sign and log the date and time after the last entry for the day. To further assist in the organization of the field books, logs, or forms, the date and the activity description should be written at the top of each page. In addition, all original field documentation should be included with the project files.

2.1 FIELD LOGBOOKS

Field logbooks should be bound; they should have preprinted lines and wide columns. They should be approximately 7½ by 4½ inches or 8½ by 11 inches in size. Loose-leaf sheets are not acceptable for field notes. If notes are taken on loose paper, they must be transcribed as soon as possible into a regular field logbook by the same person who took the notes. A field logbook should be completed for each operation undertaken during the investigation, such as field team leader (FLT) notes, drilling, collection of samples, monitoring well installation and development, etc. The logbook serves as a diary of the events of the day. Field activities will vary from project to project; however, the concept and general information to be recorded will be generally consistent. Records of the field team's activities, are maintained in a logbook. Items to be documented include the following:

- Record of tailgate meetings
- Personnel and subcontractors on job site and time spent on the site
- Field operations and personnel assigned to these activities
- Site visitors
- Log of activities
- Problems encountered and related corrective actions
- Quality control activities—e.g., decontamination procedures, QA/QC samples taken, calibration of field equipment
- Deviations from the sampling plan
- Records of communications—discussions of job-related activities with the client, subcontractors, and field team members.
- Information on addresses and contacts
- Record of invoices signed and other billing information
- Field observations
- Weather
- Calibration of field equipment
- Equipment decontamination procedures
- Sample location (sketch)
- Sampling
 - Date and time of sample collection
 - Sample interval
 - Types of samples taken
 - Number of samples collected
 - Analyses to be performed on collected samples
 - Disposal of contaminated wastes (personal protective equipment, paper towels, Visqueen®, etc.)
- Field observations
- Problems encountered and corrective action taken

2.2 DOCUMENTATION OF SAMPLING ACTIVITIES

Documentation to be made during sampling activities includes sample labels, sample seals, chain-of-custody (COC) records, and airbill and identification of courier.

2.2.1 Sample Labels

A sample label, written in indelible ink, should be affixed to all sample containers. The following information should be included at a minimum:

- Sample number
- Type of sample (grab or composite)
- Type of preservative, if applicable
- Date and time of collection
- Project location
- Analytical method
- Initials of sampling personnel

2.2.2 Custody Seals

Custody seals consist of security tape with the initials of the sampler and the date placed over the lid of each cooler containing samples. The tape should be placed such that the seal must be broken to gain access to the contents. Custody seals should not be placed directly onto volatile organic compound (VOC) sample bottles. Custody seals should be placed on coolers or boxed dry samples prior to the sampling team's release to a second or third party (e.g., shipment to the laboratory).

2.2.3 Chain-of-Custody Records

COC procedures allow for the tracing of possession and handling of individual samples from the time of field collection through laboratory analysis. The COC is documented through a record that lists each sample and the individuals responsible for sample collection, shipment, and receipt. A sample is considered in custody if it is any of the following:

- In a person's possession.
- In view after being in physical possession.
- Locked or sealed so that no one can tamper with it after it has been in an individual's physical custody.
- In a secured area, restricted to authorized personnel.

A COC record is used to record the samples taken and the analyses requested. It is the record for maintaining accountability of control over the sample. Information recorded includes:

- Time and date of sample collection
- Sample identification number and the matrix of the sample
- Sampler's signature
- Required analysis
- Number and type of containers and preservatives

A copy of the COC record should be retained by the sampler prior to release to a second or third party. Shipping receipts should be signed and filed as evidence of custody transfer between field sampler(s), courier, and laboratory. The COC record will be properly signed and the date of collection and shipment recorded, along with the sample site identifications and requested analyses for each sample.

DISCLAIMER

This SOP provides general guidance for technical issues addressed during environmental site investigation and remediation activities. It is noted, however, that each site and project is unique and these guidelines are not a substitute for common sense and good management practices based on professional training and experience. In addition, individual contract terms may affect the implementation of this SOP. The sampling team reserves the unrestricted right to change, modify or not apply these guidelines in their sole, complete, and unrestricted discretion to meet certain circumstances, contractual requirements, site conditions, or job requirements.

Standard Operating Procedure 2. Sample Handling

1.0 INTRODUCTION

In any sampling program, the integrity of a sample must be ensured from its point of collection to its final disposition. Procedures for classifying, packaging, and shipping samples are described below. Steps in the procedures should be followed to ensure sample integrity.

1.1 PURPOSE

This Standard Operating Procedure (SOP) establishes the requirements and procedures for packaging and shipping samples. It has been prepared in accordance with the U.S. Environmental Protection Agency (EPA) "Sampler's Guide to the Contract Laboratory Program (CLP)." Sample packaging and shipping procedures described in this SOP should be followed for all sample packaging and shipping. Deviations from the procedures in this SOP must be documented in a field logbook.

1.2 SCOPE

This SOP applies to sample management, packaging, and shipping.

1.3 DEFINITIONS

Custody seal: A custody seal is a tape-like seal. Placement of the custody seal is part of the chain-of-custody process and is used to prevent tampering with samples after they have been packaged for shipping.

Environmental samples: Environmental samples include drinking water, groundwater and ambient surface water, soil, sediment, treated municipal and industrial wastewater effluent, and biological specimens.

Hazardous substance: A hazardous substance is any material, including its mixtures and solutions, that is listed in Appendix A of 49 CFR 172.101 and its quantity, in one package, equals or exceeds the reportable quantity (RQ), listed in the appendix.

Nonhazardous samples: Nonhazardous samples are those samples that do not meet the definition of a hazardous sample.

Overpack: An enclosure used by a single shipper to contain one or more packages and to from one handling unit. For example, a cardboard box may be used to contain three fiberboard boxes to make handling easier and to save on shipping costs.

1.4 REFERENCES

Code of Federal Regulation available on-line at <http://www.gpoaccess.gov/cfr/index.html>

U.S. Environmental Protection Agency (EPA). 1996. "Sampler's Guide to the Contract Laboratory Program." Office of Solid Waste and Emergency Response. Washington, DC. EPA/540/R-96/032. On-Line Address:
[Http://www.epa.gov/oerrpage/superfund/programs/clp/guidance.htm#sample](http://www.epa.gov/oerrpage/superfund/programs/clp/guidance.htm#sample)

EPA. April 1992. Specifications and Guidance for Obtaining Contaminant-Free Sample Containers.

2.0 PROCEDURES

The following procedures apply to packaging and shipping nonhazardous and hazardous samples.

2.1 SAMPLE CONTAINERS

All samples will be placed in contaminant-free containers. Containers will be stored in cool, dry, clean areas to prevent exposure to fuels, solvents, and other non-site related contaminants. Sample containers with preservatives added by the laboratory will not be used if held for an extended period on the job site or exposed to extreme heat conditions.

The sample containers to be used will be dependent on the sample matrix and analyses desired. Sample containers will be supplied by the laboratory and will meet the requirements of the applicable laboratory analytical procedure. Sample containers will be filled with minimal headspace, except containers for volatile organic compound (VOC) analyses, which will be filled completely with no headspace. The no-headspace requirement applies to both soil and groundwater samples. Once opened, containers will be used immediately. If a container is used for any reason in the field (e.g., screening) and not sent to the laboratory for analysis, it will be discarded. Prior to discarding the contents of the used container and/or the container, disposal requirements will be evaluated to assess whether the contents or the container require disposal as a hazardous material.

2.2 FIELD SAMPLE IDENTIFICATION AND LABELING

Field Sample Identification.

Additional protocols for field sample identification may be defined in the project-specific sampling and analysis plans. The following general requirements will be met in all cases:

Sample Label.

A sample label will be affixed to all sample containers. The sample label, at a minimum will be completed with the following information:

- Client name
- Sample identification number
- Date and time of sample collection
- Type of sample (grab or composite)
- Initials of sampler
- Preservative used
- Analyte(s)

If a sample is split with another party, identical labels will be attached to each sample container. After labeling, liquid samples will be refrigerated or placed upright in a cooler. Wet ice in double resealable (e.g. Ziploc®) bags (to prevent leakage) will be placed around, among, and on top of the sample bottles. Enough ice will be used so that the samples will be chilled and maintained at 4 degrees Celsius ($^{\circ}\text{C}$) $\pm 2^{\circ}\text{C}$ prior to and during transport to the laboratory. Solid, dry samples will not be placed on ice.

2.3 CHAIN-OF-CUSTODY (COC)

COC procedures require a written record of the possession of individual samples from the time of collection through laboratory analyses. COC forms will generally be supplied by the laboratory at the time of sample container pick up. A sample is considered to be in custody if it is:

- In a person's possession
- In view after being in physical possession
- In a secured condition after having been in physical custody
- In a designated secure area, restricted to authorized personnel

The COC record will be used to document the samples collected and required analyses. Information recorded by field personnel on the COC record will include the following:

- Client name
- Project name
- Project location
- Sampling location
- Signature of sampler(s)
- Sample identification number
- Date and time of collection
- Sample designation (grab or composite)
- Sample matrix
- Signature of individuals involved in custody transfer (including date and time of transfer)

- Airbill number (if appropriate)
- Number and type of bottles collected for each analysis
- Type of analysis and laboratory method number
- Any comments regarding individual samples (e.g., organic vapor meter readings, special instructions).

All COC entries will be made using indelible ink and will be legible. Any errors will be corrected by drawing a single line through the incorrect entry, entering the correct information, and then initialing and dating the change. Unused portions of the COC form will be crossed out with a single strike through and initialed and dated by the field sampler. If the samples are transferred directly from the field sampler to the laboratory, both the receiving and relinquishing individuals will sign the COC. If samples are transported to the laboratory by a commercial carrier, signed airbills or other applicable bills of lading will serve as evidence of custody transfer between the field sampler and carrier as well as carrier and laboratory. The sampler will retain copies of the COC record and airbills, or bills of lading. If the COC records are sequentially numbered the record number and airbill number will be cross-referenced in the field logbook or appropriate field form.

2.4 SAMPLE TRACKING

The sample register may be electronic or a bound logbook with sequentially numbered pages. The sample register is used to document daily sample collection. The sample register is also used as the key to correlate field samples with duplicate samples. Information that will be recorded in the sample register includes the following:

- Client name
- Project name and location
- Job number
- Date and time of collection
- Sample identification number
- Sample designation (e.g., grab or composite, etc.)
- Sample matrix (e.g., soil, groundwater, etc.)
- Number and type of bottles
- Type of analysis
- Sample destination
- Sampler's initials

If the sample register is electronic, a hard copy of each day's sampling activities will be maintained in the field logbook.

2.5 SAMPLE PRESERVATION/STORAGE

The requirements for sample preservation are dependent on the desired analyses and the sample matrix. Sample preservation requirements outlined will be detailed in the Sampling and Analysis Plan.

2.6 QUALITY CONTROL SAMPLE MANAGEMENT

The number and types of quality control (QC) samples to be collected for a project will be defined in the Sampling and Analysis Plan.

2.7 SAMPLE HOLDING TIMES

The holding times for samples will depend on the analysis and the sample matrix. Unless otherwise specified, holding times determined by the laboratory will be adhered to.

3.0 SAMPLE CLASSIFICATION AND SHIPPING

Most environmental samples are not hazardous samples and do not need special packaging or handling during shipping. It is the responsibility of the field team leader to ensure that sample materials are shipped properly.

3.1 PACKAGING NONHAZARDOUS SAMPLES

Nonhazardous samples, after being appropriately containerized, labeled, and tagged, should be packaged in the following manner.

1. Place the sample in a re-sealable plastic bag.
2. Place the bagged sample in a cooler and pack it to prevent breakage.
3. Prevent breakage of bottles during shipment by wrapping the sample container in bubble wrap. It is recommended that the cooler be lined with a large plastic garbage bag before samples, ice, and absorbent packing material are placed in the cooler.
4. Add a sufficient quantity of ice to the cooler to cool and hold samples to 4 °C until arrival at the laboratory. Ice should be double bagged in re-sealable plastic bags to prevent the melted ice from leaking out. A temperature blank (a sample bottle filled with distilled water) will be included with the cooler. Ice will typically not be added to coolers/sample shipping containers for dry solid samples.
5. Seal the completed chain-of-custody forms in a plastic bag and tape the plastic bag to the inside of the cooler lid.
6. Tape any instructions for returning the cooler to the inside of the lid.
7. Close the lid of the cooler and tape it shut by wrapping strapping tape around both ends and hinges of the cooler at least once. Tape shut any drain plugs on the cooler.
8. Place two signed custody seals on the cooler, ensuring that each one covers the cooler lid and side of the cooler. Place clear plastic tape over the custody seals.
9. Place address labels on the outside of the cooler.
10. Ship samples overnight by a commercial carrier such as FedEx.

DISCLAIMER

This SOP provides general guidance for technical issues addressed during environmental site investigation and remediation activities. It is noted, however, that each site and project is unique and these guidelines are not a substitute for common sense and good management practices based on professional training and experience. In addition, individual contract terms may affect the implementation of this SOP. The sampling team reserves the unrestricted right to change, modify or not apply these guidelines in their sole, complete, and unrestricted discretion to meet certain circumstances, contractual requirements, site conditions, or job requirements.

Analytical Results -- DRAFT

| Compound | EPA PRG (soil) | Units | Home 1 | Home 2 | Home 3 | Home 4 | Home 5 |
|------------------------|-------------------|-----------|----------|--------|----------|----------|----------|
| Arsenic | 3.90E-01 | mg/kg-wet | ND | ND | ND | ND | 4.64E+00 |
| Barium | 1.50E+04 | mg/kg-wet | 5.20E+00 | ND | 7.20E+00 | 2.53E+01 | 2.51E+02 |
| Cadmium | 7.00E+01 | mg/kg-wet | ND | ND | ND | ND | 2.87E+00 |
| Chromium (insol salts) | 1.20E+05 | mg/kg-wet | ND | ND | ND | ND | 1.78E+01 |
| Lead | 4.00E+02 | mg/kg-wet | 4.29E+01 | ND | ND | ND | 2.66E+04 |
| Mercury | 1.00E+01 | mg/kg-wet | ND | ND | 0.0609 | ND | 4.03E-01 |
| Selenium | 3.90E+02 | mg/kg-wet | ND | ND | ND | ND | ND |
| Silver | 3.90E+02 | mg/kg-wet | ND | ND | ND | ND | 6.59E-01 |
| 4,4'-DDD | 2.00E+02 | ug/kg-wet | ND | ND | ND | ND | ND |
| 4,4'-DDE | 1.40E+00 | ug/kg-wet | ND | ND | ND | ND | ND |
| 4,4'-DDT | 1.70E+00 | ug/kg-wet | ND | ND | ND | 3.55E+05 | ND |
| Aldrin | 2.90E-02 | ug/kg-wet | ND | ND | ND | ND | ND |
| alpha-BHC | | ug/kg-wet | ND | ND | ND | ND | ND |
| alpha-Chlordane | | ug/kg-wet | ND | ND | 5.26E+04 | ND | ND |
| beta-BHC | | ug/kg-wet | ND | ND | ND | ND | ND |
| Chlordane, total | | ug/kg-wet | ND | ND | ND | ND | ND |
| delta-BHC | | ug/kg-wet | ND | ND | ND | ND | ND |
| Dieldrin | 3.00E-02 | ug/kg-wet | ND | ND | ND | ND | ND |
| Endosulfan I | 3.70E+02 | ug/kg-wet | ND | ND | ND | ND | ND |
| Endosulfan II | 3.70E+02 | ug/kg-wet | ND | ND | ND | ND | ND |
| Endosulfan sulfate | | ug/kg-wet | ND | ND | ND | ND | ND |
| Endrin | 1.80E+01 | ug/kg-wet | ND | ND | ND | ND | ND |
| Endrin aldehyde | | ug/kg-wet | ND | ND | ND | ND | ND |
| Endrin ketone | | ug/kg-wet | ND | ND | ND | ND | ND |
| gamma-BHC | | ug/kg-wet | ND | ND | ND | ND | ND |
| gamma-Chlordane | | ug/kg-wet | ND | ND | 8.15E+04 | ND | ND |
| Heptachlor | 1.10E-01 | ug/kg-wet | ND | ND | ND | ND | ND |
| Heptachlor epoxide | 5.30E-02 | ug/kg-wet | ND | ND | ND | ND | ND |
| Methoxychlor | 3.10E+02 | ug/kg-wet | ND | ND | ND | ND | ND |

Clyde Ohio

Analytical Results -- DRAFT

| | | | | | | | |
|------------------------|-----------|----------|----------|----------|----------|----------|----------|
| Toxaphene | ug/kg-wet | 4.40E-01 | ND | ND | ND | ND | ND |
| Aroclor 1016 | ug/kg-wet | 3.90E+00 | ND | ND | ND | ND | ND |
| Aroclor 1221 | ug/kg-wet | 1.40E-01 | ND | ND | ND | ND | ND |
| Aroclor 1232 | ug/kg-wet | 1.40E-01 | ND | ND | ND | ND | ND |
| Aroclor 1242 | ug/kg-wet | 2.20E-01 | ND | ND | ND | ND | ND |
| Aroclor 1248 | ug/kg-wet | 2.20E-01 | ND | ND | ND | ND | ND |
| Aroclor 1254 | ug/kg-wet | 2.20E-01 | ND | ND | ND | ND | ND |
| Aroclor 1260 | ug/kg-wet | 2.20E-01 | ND | ND | ND | ND | ND |
| Benz(a)anthracene | ug/kg-wet | 1.50E-01 | ND | ND | ND | ND | 5.68E+03 |
| Benzaldehyde | ug/kg-wet | 7.80E+03 | 1.84E+04 | 1.95E+04 | 1.20E+04 | 6.22E+04 | 1.41E+04 |
| Benzo(a)pyrene | ug/kg-wet | 1.50E-02 | ND | ND | ND | ND | 3.76E+03 |
| Benzo(b)fluoranthene | ug/kg-wet | 1.50E-01 | ND | ND | ND | ND | 5.29E+03 |
| Benzo(k)fluoranthene | ug/kg-wet | 1.50E+00 | ND | ND | ND | ND | 2.04E+03 |
| Bis(2-ethylhexyl) | | | | | | | |
| phthlate | ug/kg-wet | | ND | ND | 3280 | ND | 2.80E+03 |
| Chrysene | ug/kg-wet | 1.50E+01 | ND | ND | ND | ND | 4.71E+03 |
| Fluoranthene | ug/kg-wet | 2.30E+03 | ND | ND | ND | ND | 2.64E+03 |
| Indeno(1,2,3-cd)Pyrene | ug/kg-wet | 1.50E-01 | ND | ND | ND | ND | 2.58E+03 |
| Pyrene | ug/kg-wet | 1.70E+03 | ND | ND | ND | ND | 3.54E+03 |
| m,p-Xylene | ug/kg-wet | 6.00E+02 | ND | ND | ND | ND | 2.47E+01 |
| Toluene | ug/kg-wet | 5.00E+03 | ND | ND | ND | ND | 3.22E+01 |

ND = not detected

This document is DRAFT--not for release



New Jersey Department of Health and Senior Services

HAZARDOUS SUBSTANCE FACT SHEET

Common Name: **BENZALDEHYDE**

CAS Number: 100-52-7

DOT Number: UN 1990

RTK Substance number: 0196

Date: July 1996

Revision: July 2002

HAZARD SUMMARY

- * **Benzaldehyde** can affect you when breathed in and by passing through your skin.
- * **Benzaldehyde** may cause mutations. Handle with extreme caution.
- * Breathing **Benzaldehyde** can irritate the nose and throat causing coughing and shortness of breath.
- * Contact can irritate the skin and eyes, and repeated exposure can cause a skin rash to develop.
- * Exposure can cause you to feel dizzy and lightheaded. Higher levels can cause seizures and passing out.
- * **Benzaldehyde** may cause a skin allergy. If allergy develops, very low future exposure can cause itching and a skin rash.

IDENTIFICATION

Benzaldehyde is a colorless to yellowish liquid with a bitter almond odor. It is used to make dyes, flavors and perfumes, and as a solvent.

REASON FOR CITATION

- * **Benzaldehyde** is on the Hazardous Substance List because it is cited by DOT, HHAG and NFPA.
- * Definitions are provided on page 5.

HOW TO DETERMINE IF YOU ARE BEING EXPOSED

The New Jersey Right to Know Act requires most employers to label chemicals in the workplace and requires public employers to provide their employees with information and training concerning chemical hazards and controls. The federal OSHA Hazard Communication Standard, 1910.1200, requires private employers to provide similar training and information to their employees.

- * Exposure to hazardous substances should be routinely evaluated. This may include collecting personal and area air samples. You can obtain copies of sampling results from your employer. You have a legal right to this information under OSHA 1910.1020.

- * If you think you are experiencing any work-related health problems, see a doctor trained to recognize occupational diseases. Take this Fact Sheet with you.
- * **ODOR THRESHOLD = 0.042 ppm.**
- * The range of accepted odor threshold values is quite broad. Caution should be used in relying on odor alone as a warning of potentially hazardous exposures.

WORKPLACE EXPOSURE LIMITS

No occupational exposure limits have been established for **Benzaldehyde**. This does not mean that this substance is not harmful. Safe work practices should always be followed.

- * **Benzaldehyde** may cause mutations. All contact with this chemical should be reduced to the lowest possible level.
- * It should be recognized that **Benzaldehyde** can be absorbed through your skin, thereby increasing your exposure.

WAYS OF REDUCING EXPOSURE

- * Where possible, enclose operations and use local exhaust ventilation at the site of chemical release. If local exhaust ventilation or enclosure is not used, respirators should be worn.
- * Wear protective work clothing.
- * Wash thoroughly immediately after exposure to **Benzaldehyde** and at the end of the workshift.
- * Post hazard and warning information in the work area. In addition, as part of an ongoing education and training effort, communicate all information on the health and safety hazards of **Benzaldehyde** to potentially exposed workers.

This Fact Sheet is a summary source of information of all potential and most severe health hazards that may result from exposure. Duration of exposure, concentration of the substance and other factors will affect your susceptibility to any of the potential effects described below.

HEALTH HAZARD INFORMATION

Acute Health Effects

The following acute (short-term) health effects may occur immediately or shortly after exposure to **Benzaldehyde**:

- * Breathing **Benzaldehyde** can irritate the nose and throat causing coughing and shortness of breath.
- * Contact can irritate the skin and eyes, and repeated exposure can cause a skin rash to develop.
- * Exposure can cause you to feel dizzy and lightheaded. Higher levels can cause seizures and passing out.

Chronic Health Effects

The following chronic (long-term) health effects can occur at some time after exposure to **Benzaldehyde** and can last for months or years:

Cancer Hazard

- * **Benzaldehyde** may cause mutations (genetic changes). Whether or not it poses a cancer or reproductive hazard needs further study.

Reproductive Hazard

- * According to the information presently available to the New Jersey Department of Health and Senior Services, **Benzaldehyde** has not been tested for its ability to affect reproduction.

Other Long-Term Effects

- * **Benzaldehyde** may cause a skin allergy. If allergy develops, very low future exposure can cause itching and a skin rash.

MEDICAL

Medical Testing

If symptoms develop or overexposure is suspected, the following is recommended:

- * Evaluation by a qualified allergist, including careful exposure history and special testing, may help diagnose skin allergy.

Any evaluation should include a careful history of past and present symptoms with an exam. Medical tests that look for damage already done are not a substitute for controlling exposure.

Request copies of your medical testing. You have a legal right to this information under OSHA 1910.1020.

WORKPLACE CONTROLS AND PRACTICES

Unless a less toxic chemical can be substituted for a hazardous substance, **ENGINEERING CONTROLS** are the most effective way of reducing exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Isolating operations can also reduce exposure. Using respirators or protective equipment is less effective than the controls mentioned above, but is sometimes necessary.

In evaluating the controls present in your workplace, consider: (1) how hazardous the substance is, (2) how much of the substance is released into the workplace and (3) whether harmful skin or eye contact could occur. Special controls should be in place for highly toxic chemicals or when significant skin, eye, or breathing exposures are possible.

In addition, the following control is recommended:

- * Where possible, automatically pump liquid **Benzaldehyde** from drums or other storage containers to process containers.

Good **WORK PRACTICES** can help to reduce hazardous exposures. The following work practices are recommended:

- * Workers whose clothing has been contaminated by **Benzaldehyde** should change into clean clothing promptly.
- * Contaminated work clothes should be laundered by individuals who have been informed of the hazards of exposure to **Benzaldehyde**.
- * Eye wash fountains should be provided in the immediate work area for emergency use.
- * If there is the possibility of skin exposure, emergency shower facilities should be provided.
- * On skin contact with **Benzaldehyde**, immediately wash or shower to remove the chemical. At the end of the workshift, wash any areas of the body that may have contacted **Benzaldehyde**, whether or not known skin contact has occurred.
- * Do not eat, smoke, or drink where **Benzaldehyde** is handled, processed, or stored, since the chemical can be swallowed. Wash hands carefully before eating, drinking, applying cosmetics, smoking, or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT

WORKPLACE CONTROLS ARE BETTER THAN PERSONAL PROTECTIVE EQUIPMENT. However, for some jobs (such as outside work, confined space entry, jobs done only once in a while, or jobs done while workplace controls are being installed), personal protective equipment may be appropriate.

OSHA 1910.132 requires employers to determine the appropriate personal protective equipment for each hazard and to train employees on how and when to use protective equipment.

The following recommendations are only guidelines and may not apply to every situation.

Clothing

- * Avoid skin contact with **Benzaldehyde**. Wear solvent-resistant gloves and clothing. Safety equipment suppliers/manufacturers can provide recommendations on the most protective glove/clothing material for your operation.
- * All protective clothing (suits, gloves, footwear, headgear) should be clean, available each day, and put on before work.
- * ACGIH recommends *Polyvinyl Alcohol*, *Butyl Rubber* and *Viton* as protective materials.

Eye Protection

- * Wear indirect-vent, impact and splash resistant goggles when working with liquids.
- * Wear a face shield along with goggles when working with corrosive, highly irritating or toxic substances.

Respiratory Protection

IMPROPER USE OF RESPIRATORS IS DANGEROUS.

Such equipment should only be used if the employer has a written program that takes into account workplace conditions, requirements for worker training, respirator fit testing and medical exams, as described in OSHA 1910.134.

- * Where the potential for overexposure exists, use a NIOSH approved supplied-air respirator with a full facepiece operated in a pressure-demand or other positive-pressure mode. For increased protection use in combination with an auxiliary self-contained breathing apparatus operated in a pressure-demand or other positive-pressure mode.

HANDLING AND STORAGE

- * Prior to working with **Benzaldehyde** you should be trained on its proper handling and storage.
- * **Benzaldehyde** may react violently with PERFORMIC ACID.
- * **Benzaldehyde** is not compatible with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE); STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE); ALCOHOLS; STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC); RUST; AMINES; ALKALIES; and REDUCING AGENTS.
- * Store under *Nitrogen* in tightly closed containers in a cool, well-ventilated area away from LIGHT and STEAM.
- * Sources of ignition, such as smoking and open flames, are prohibited where **Benzaldehyde** is used, handled, or stored in a manner that could create a potential fire or explosion hazard.

QUESTIONS AND ANSWERS

- Q: If I have acute health effects, will I later get chronic health effects?
- A: Not always. Most chronic (long-term) effects result from repeated exposures to a chemical.
- Q: Can I get long-term effects without ever having short-term effects?
- A: Yes, because long-term effects can occur from repeated exposures to a chemical at levels not high enough to make you immediately sick.
- Q: What are my chances of getting sick when I have been exposed to chemicals?
- A: The likelihood of becoming sick from chemicals is increased as the amount of exposure increases. This is determined by the length of time and the amount of material to which someone is exposed.
- Q: When are higher exposures more likely?
- A: Conditions which increase risk of exposure include physical and mechanical processes (heating, pouring, spraying, spills and evaporation from large surface areas such as open containers), and "confined space" exposures (working inside vats, reactors, boilers, small rooms, etc.).
- Q: Is the risk of getting sick higher for workers than for community residents?
- A: Yes. Exposures in the community, except possibly in cases of fires or spills, are usually much lower than those found in the workplace. However, people in the community may be exposed to contaminated water as well as to chemicals in the air over long periods. This may be a problem for children or people who are already ill.
- Q: What are the likely health problems from chemicals which cause mutations?
- A: There are two primary health concerns associated with mutagens: (1) cancers can result from changes induced in cells and, (2) adverse reproductive and developmental outcomes can result from damage to the egg and sperm cells.

The following information is available from:

New Jersey Department of Health and Senior Services
Occupational Health Service
PO Box 360
Trenton, NJ 08625-0360
(609) 984-1863
(609) 984-7407 (fax)

Web address: <http://www.state.nj.us/health/eoh/odisweb/>

Industrial Hygiene Information

Industrial hygienists are available to answer your questions regarding the control of chemical exposures using exhaust ventilation, special work practices, good housekeeping, good hygiene practices, and personal protective equipment including respirators. In addition, they can help to interpret the results of industrial hygiene survey data.

Medical Evaluation

If you think you are becoming sick because of exposure to chemicals at your workplace, you may call personnel at the Department of Health and Senior Services, Occupational Health Service, who can help you find the information you need.

Public Presentations

Presentations and educational programs on occupational health or the Right to Know Act can be organized for labor unions, trade associations and other groups.

Right to Know Information Resources

The Right to Know Infoline (609) 984-2202 can answer questions about the identity and potential health effects of chemicals, list of educational materials in occupational health, references used to prepare the Fact Sheets, preparation of the Right to Know Survey, education and training programs, labeling requirements, and general information regarding the Right to Know Act. Violations of the law should be reported to (609) 984-2202.

DEFINITIONS

ACGIH is the American Conference of Governmental Industrial Hygienists. It recommends upper limits (called TLVs) for exposure to workplace chemicals.

A **carcinogen** is a substance that causes cancer.

The **CAS number** is assigned by the Chemical Abstracts Service to identify a specific chemical.

A **combustible** substance is a solid, liquid or gas that will burn.

A **corrosive** substance is a gas, liquid or solid that causes irreversible damage to human tissue or containers.

DEP is the New Jersey Department of Environmental Protection.

DOT is the Department of Transportation, the federal agency that regulates the transportation of chemicals.

EPA is the Environmental Protection Agency, the federal agency responsible for regulating environmental hazards.

A **fetus** is an unborn human or animal.

A **flammable** substance is a solid, liquid, vapor or gas that will ignite easily and burn rapidly.

The **flash point** is the temperature at which a liquid or solid gives off vapor that can form a flammable mixture with air.

HHAG is the Human Health Assessment Group of the federal EPA.

IARC is the International Agency for Research on Cancer, a scientific group that classifies chemicals according to their cancer-causing potential.

A **miscible** substance is a liquid or gas that will evenly dissolve in another.

mg/m³ means milligrams of a chemical in a cubic meter of air. It is a measure of concentration (weight/volume).

A **mutagen** is a substance that causes mutations. A **mutation** is a change in the genetic material in a body cell. Mutations can lead to birth defects, miscarriages, or cancer.

NAERG is the North American Emergency Response Guidebook. It was jointly developed by Transport Canada, the United States Department of Transportation and the Secretariat of Communications and Transportation of Mexico. It is a guide for first responders to quickly identify the specific or generic hazards of material involved in a transportation incident, and to protect themselves and the general public during the initial response phase of the incident.

NCI is the National Cancer Institute, a federal agency that determines the cancer-causing potential of chemicals.

NFPA is the National Fire Protection Association. It classifies substances according to their fire and explosion hazard.

NIOSH is the National Institute for Occupational Safety and Health. It tests equipment, evaluates and approves respirators, conducts studies of workplace hazards, and proposes standards to OSHA.

NTP is the National Toxicology Program which tests chemicals and reviews evidence for cancer.

OSHA is the Occupational Safety and Health Administration, which adopts and enforces health and safety standards.

PEL is the Permissible Exposure Limit which is enforceable by the Occupational Safety and Health Administration.

PIH is a DOT designation for chemicals which are Poison Inhalation Hazards.

ppm means parts of a substance per million parts of air. It is a measure of concentration by volume in air.

A **reactive** substance is a solid, liquid or gas that releases energy under certain conditions.

A **teratogen** is a substance that causes birth defects by damaging the fetus.

TLV is the Threshold Limit Value, the workplace exposure limit recommended by ACGIH.

The **vapor pressure** is a measure of how readily a liquid or a solid mixes with air at its surface. A higher vapor pressure indicates a higher concentration of the substance in air and therefore increases the likelihood of breathing it in.

HANDLING AND STORAGE (See page 3)

| | | |
|---|--------|------|
| Hazard rating | NJDHSS | NFPA |
| FLAMMABILITY | - | 2 |
| REACTIVITY | - | 0 |
| COMBUSTIBLE POISONOUS GASES ARE PRODUCED IN FIRE CONTAINERS MAY EXPLODE IN FIRE | | |

FIRE HAZARDS

- * **Benzaldehyde** is a COMBUSTIBLE LIQUID.
- * Use dry chemical, CO₂, water spray, alcohol or polymer foam extinguishers.
- * POISONOUS GASES ARE PRODUCED IN FIRE.
- * CONTAINERS MAY EXPLODE IN FIRE.
- * Use water spray to keep fire-exposed containers cool.
- * Vapors may travel to a source of ignition and flash back.
- * Vapor is heavier than air and may travel a distance to cause a fire or explosion far from the source.
- * If employees are expected to fight fires, they must be trained and equipped as stated in OSHA 1910.156.

If Benzaldehyde is spilled or leaked, take the following steps:

- * Evacuate persons not wearing protective equipment from area of spill or leak until clean-up is complete.
- * Remove all ignition sources.
- * Absorb liquids in vermiculite, dry sand, earth, or a similar material and deposit in sealed containers.
- * Ventilate and wash area after clean-up is complete.
- * It may be necessary to contain and dispose of **Benzaldehyde** as a HAZARDOUS WASTE. Contact your state Department of Environmental Protection (DEP) or your regional office of the federal Environmental Protection Agency (EPA) for specific recommendations.
- * If employees are required to clean-up spills, they must be properly trained and equipped. OSHA 1910.120(q) may be applicable.

FOR LARGE SPILLS AND FIRES immediately call your fire department. You can request emergency information from the following:

CHEMTREC: (800) 424-9300
NJDEP HOTLINE: 1-877-WARN-DEP

Eye Contact

- * Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting upper and lower lids.

Skin Contact

- * Quickly remove contaminated clothing. Immediately wash contaminated skin with large amounts of soap and water.

Breathing

- * Remove the person from exposure.
- * Begin rescue breathing (using universal precautions) if breathing has stopped and CPR if heart action has stopped.
- * Transfer promptly to a medical facility.

PHYSICAL DATA

Vapor Pressure: 0.13 mm Hg at 77°F (25°C)

Flash Point: 145°F (63°C)

Water Solubility: Slightly soluble

OTHER COMMONLY USED NAMES

Chemical Name:

Benzoic Aldehyde

Other Names:

Benzene Carbaldehyde: Oil of Bitter Almond

Not intended to be copied and sold for commercial purposes.

NEW JERSEY DEPARTMENT OF HEALTH AND
SENIOR SERVICES

Right to Know Program

PO Box 368, Trenton, NJ 08625-0368
(609) 984-2202

Before leaving, read the current COCOPHONY featured in this brochure.

1994

Shaw-Walsh Industries Corporation
12000 W. North Ave. PA 19142-2931

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HARMFUL FUMES MAY
BE PRODUCED AT
TEMPERATURES
ABOVE 500° F. (260° C).

FORMED AT 75°F
(322°C) AND COV

Adapted from the library of
processes, and the extent

Due to the fact that the...

...retire to the ...

...pass water...

...and ...

provide the same ventilation and

...procuring equipment, avoid training

MADE IN USA

The Hoechst Celanese Corporation is a registered trademark of Hoechst AG.

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RT 869 7 2148 04.15
FZ

RT TUE 2148 04.15
FZ

Instructions:

ORIGIN ID: NPHA (801) 533-0400
DEWSNUP, KING & OLSEN

36 S STATE ST STE 2400

SALT LAKE CITY, UT 841111800
UNITED STATES US

SHIP DATE: 11APR13
ACTWGT: 0.5 LB
CAD: /OFFC1400
DIMS: 0x0x0 IN

BILL SENDER

TO ACTING DIRECTOR ROBERT PERCIAS
USEPA ARIEL RIE BLDG (AR)
1200 PENNSYLVANIA AVE NW

WASHINGTON DC 20004

(202) 272-0165

REF:

INV:

DEPT:



FedEx
Express



TRK# 8020 1644 2148
0215

TUE - 16 APR AA
EXPRESS SAVER

SA RDVA

20004
DC-US DCA



Part # 100207-433 FINE 07/13 0050/ANBY/10NLS 11/PU 03R62C68

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Superfund Division Controlled Correspondence for Division Director's Signature

Control Number: AX-13-000-4455

Due in SFDIO:

April 30, 2013

Due Date:

May 2, 2013

Subject: Daily Reading File – Clyde Ohio Cancer Cluster

Assigned Staff: Steve Wolfe

Phone: 440-250-1718

| Name | Signature | Date |
|--|-----------|------|
| Author: <u>Steve Wolfe</u> | | |
| Section Chief: <u>Mark Durno</u> | | |
| ORC (If Applicable): _____ | | |
| Branch Chief: <u>Jason El-Zein</u> | | |
| **Send Electronic Version to SFDIO** | | |
| Public Affairs Specialist: <u>Megan McSeveney</u> Student Aide: _____ | | |
| Division Director: <u>Richard C. Karl</u> | | |

Special Instructions: _____

